54th CONFERENCE OF DIRECTORS GENERAL OF CIVIL AVIATION ASIA AND PACIFIC REGIONS

Ulaanbaatar, Mongolia
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AGENDA ITEM 3: AVIATION SAFETY AND AIR NAVIGATION

AUTOMATION INTERFACE BETWEEN FLIGHT INFORMATION REGIONS

(Presented by the Civil Air Navigation Service Organization)

SUMMARY

CANSO had in the past highlighted a number of impediments to the safety and efficiency of flights crossing of Flight Information Region (FIR) boundaries such as inconsistencies in the filing of flight plans and problems arising from flights transitioning between surveillance and non-surveillance airspaces. This paper presents a recent CANSO Best Practice Guide addressing the impediment caused by the disparities and the lack of automated connectivity between adjacent ANSPs. It provides detailed and practical examples of how neighbouring ANSPs can collaborate to enhance cross boundary interfaces and support interoperability and complementary implementation. The Guide is especially pertinent to this region as AIDC implementation is one of the critical upgrades recommended in the ICAO Asia Pacific Seamless ATM Plan.

AUTOMATION INTERFACE BETWEEN FLIGHT INFORMATION REGIONS

1. INTRODUCTION

1.1 CANSO had in the past published several best practice guides where several impediments to the safe and efficient crossing of Flight Information Region (FIR) boundaries were identified. These include for example inconsistencies in the filing of flight plans as well as problems arising from flights transitioning between surveillance and non-surveillance airspaces.

1.2 This paper presents a recently published CANSO Best Practice Guide entitled *Automation Interface Between Flight Information Regions: Best Practice Guide for ANSPs*. It addresses the impediment caused by the lack of automated connectivity between adjacent ANSPs and provides detailed and practical examples of how neighbouring ANSPs can collaborate to enhance the safety and efficiency of flights crossing of FIR boundaries through the implementation of automated exchange of flight data.

2. DISCUSSION

2.1 This CANSO Guide is especially pertinent to the region as the implementation of AIDC (ATS Interfacility Data-link Communications) is one of the top ten priority upgrades in the ICAO Asia Pacific Seamless ATM Plan.

2.2 The CANSO Guide addresses disparities and the lack of automated connectivity between adjacent ANSPs. It provides best practices that address the negative impacts resulting from Air Traffic Controllers (ATCO) having to manually coordinate aircraft boundary estimates, flight levels, and other pertinent flight plan data verbally (via landline) to adjacent Air Traffic Services Units (ATSU). Verbal coordination increases workload levels for both the initiating and receiving ATSUs, since ATCOS must manually record the transmitted data on flight progress strips, and/or make computer entries to update flight plan processing systems.

2.3 Manual coordination between ATSUs introduces risk as it can lead to disparities in the information exchanged. Moreover, the additional steps that ATCOs must take for each flight decreases the amount of time available to the ATCO for scanning surveillance displays, issuing clearances and advisories, and ensuring that potential traffic conflicts are resolved.

2.4 The importance of AIDC application to improve the overall safety and efficiency of the ATM system and to increase airspace capacity by reducing controller workload has been discussed and recognized by APANPIRG at past meetings and reflected in its meeting Conclusions, for example:

> **Conclusion 24/17: AIDC Implementation**
>
> Recognizing that States implementing AIDC messaging may be doing so without previous knowledge or experience, and significant safety, ATC capacity and workload benefits arise from implementation of an appropriately selected initial suite of AIDC messages;
>
> States should:
>
> a) engage as soon as possible in AIDC trials to develop knowledge and address any related ATM or communications system issues;
>
> b) implement operational AIDC messaging as a matter of priority, in accordance with APANPIRG Conclusion 19/19; and
>
> c) implement as far as practicable, the AIDC messages Advanced Boundary Information (ABI), Coordinate Estimate (EST), Acceptance (ACP), Transfer of Control (TOC) and Assumption of Control (AOC).

2.5 AIDC has therefore been identified as one of the top ten priorities in the ICAO APAC Seamless ATM Plan as the automated exchange of information between ATS units supports critical ATC functions such as the notification of flights approaching an FIR boundary, coordination of boundary-crossing conditions, and transfer of control.

2.6 While there is on-going work in this region among ANSPs to implement AIDC between adjacent FIRs, there is a need to speed up the implementation process as it is an important enabler of seamless ATM and the foundation for a number of ICAO ASBU modules. ANSPs are therefore encouraged to make use of this CANSO Best Practice Guide to plan and implement AIDC with their neighboring FIRs.

2.7 The following is a brief overview of the main topics covered in the CANSO Guide:

- Safety and Efficiency Benefits form Automated Data Exchange
- Relationship to the ASBU Framework
- Implementation Opportunities - There are many circumstances that create opportunities to implement, modify, or enhance automated data exhcnage between neighbouring ANSPs. Examples include changing the ATS being provided in the FIR boundary area and replacing or modifying a flight data processing system. Safety concerns can also drive the change to an existing system
- Interface Options and Considerations – This section covers automation benefits, automated interface and protocols in various regions as well as CPDLC and ADS-C operations.
- Implementation Planning - This section covers Interface/System, Implementation Planning, Stakeholders, Gap Analysis, Task Analysis, System Requirements; Standards, and Implementation Lessons
- A section on Related Considerations covering Safety Management, Contingency Procedures, Enhancement Opportunities and Inter-ATS Unit Agreements.

2.8 The complete CANSO publication *Automation Interface Between Flight Information Regions: Best Practice Guide for ANSPs* can be down loaded from the CANSO website www.canso.org.

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

a) Note the information contained in this paper;

b) Encourage States and ANSPs to expedite the implementation of AIDC between neighbouring FIRS and in doing so, to take into consideration the information available in the CANSO publication *Automation Interface Between Flight Information Regions: Best Practice Guide for ANSPs*; and

c) Discuss any other matters as appropriate.

— END —